



PestFacts WA

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Mind chemical withholding periods for native budworm sprays

Caterpillars

- Alma
- Nabawa
- Moonyoonooka
- Maya
- Dalwallinu
- Koorda
- Mukinbudin
- Wyalkatchem
- Northam
- York
- Kendenup



Image 1: A native budworm caterpillar. Photo courtesy of: DPIRD.

Jack Watson (Elders) reports finding above threshold numbers of budworm caterpillars in pulse and canola crops at Mukinbudin, Wyalkatchem, Koorda and Northam.

Department of Primary Industries and Regional Development (DPIRD) staff have also reported above threshold numbers of native budworm caterpillars in canola crops at Moonyoonooka (84 caterpillars per 10 sweeps), Nabawa (60 per 10 sweeps) and Alma (42 per 10 sweeps).

These high caterpillar numbers are not unexpected given the very high numbers of budworm moths that have been recorded flying into the grain growing areas over the last month.

DPIRD staff found less than 1 budworm caterpillar per 10 sweeps in canola at Northam, York and Kendenup. However, because high numbers of budworm moths have been recorded flying into some of these areas (see Native budworm moth section below) in recent weeks, it is likely that caterpillar numbers could increase in the coming weeks.

A farmer near Maya sweep netted a couple of lupin crops and found less than one budworm caterpillar per 10 sweeps. The caterpillars captured were up to 10 mm in length.

An agronomist has reported finding 2 budworm caterpillars per 10 sweeps in a lupin crop west of Dalwallinu.

The cold, wet and windy weather that arrived late this week may help reduce the numbers of eggs and small caterpillars to some extent. Eggs may be dislodged, and small caterpillars may become stuck or drown. Predators, parasites and disease can also affect population numbers. However, given the number of native budworm caterpillars already found at some locations, and the very high numbers of moths that have been recorded migrating into some areas in recent weeks, regular sweep net monitoring of susceptible crops will be required to determine if control measures are needed.

Native budworm moths

- Usual trapping locations

Native budworm moth flights have moderated in some areas while other locations have once again reported very high numbers of moths being captured.



Image 2: Native budworm moths captured in a pheromone trap at Moonyoonooka on 20 September 2024. Photo courtesy of: Surya Dhakal (DPIRD).

The highest native budworm moth captures for each location from the last 2 weeks include: Moonyoonooka (1438 moths over 3 weeks), Maya (1193), York (1119), Dalwallinu (980), Bindi Bindi (850), South Stirlings (800), Borden (572), Kellerberrin South (545), Varley (448), Kellerberrin North (404,) Nabawa (398 over 3 weeks), Northam (363), Cadoux (261), Dowerin (194) and Cunderdin (175). There have been lower moth captures recorded at Narrogin (82), Kendenup (79), Cuballing (65), Boyup Brook (53) and Kojonup (41).

A map showing the native budworm moth flights recorded so far this season is available at Cesar Australia's [MothTrapVisWA](#) page.

Management

Growers who are contemplating spraying maturing canola, lupins and field peas in the coming weeks should be mindful of chemical withholding periods (WHP) and check chemical labels before spraying. The minimum times required between the spray application date and harvesting or windrowing crops can vary from 0 to 28 days (see Table 1 below) depending on the product.

Table 1 Withholding periods in days for harvest/swathing; registered insecticides for native budworm.

Active ingredient	Canola	Lupins	Field peas
Alphacypermethrin	21	28	28
Betacypermethrin	21	28	28
Chlorantraniliprole (600 g/L)	N/A	14	14
Cyantraniliprole	21	N/A	N/A
Cypermethrin	21	28	28
Deltamethrin	7	7	7
Emamectin	14	21	21
Esfenvalerate	14	14	14
Gamma-cyhalothrin	7	14	7
Lambda-cyhalothrin	7	14	7
Methomyl	7	7	7
Permethrin	N/A	N/A	2
Spinetoram	14	14	14
Zetacypermethrin	N/A	28	28
Btk	0	0	0
NPK	0	0	0

Growers and agronomists can access DPIRD's free MyPestGuide CropScout application and enter their results into the sweep net module to calculate native budworm spray thresholds quickly in the field.

Pesticide options for the control of native budworm can be found in DPIRD's 2024 Winter Spring Insecticide Guide.

Further information

Detailed information on this pest can be found at the department's Management and economic thresholds for native budworm.

To read about prior native budworm activity this season refer to the 2024 PestFacts WA newsletter articles in:

- Issue 17 Check your crops for native budworm caterpillars
- Issue 16 Native budworm moth activity update
- Issue 11 Native budworm caterpillars are active
- Issue 5 Native budworm moth flights have started.

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Smuts in cereals – this year and going forward

Flag smut in wheat

- Nangetty
- Merredin
- Narembeen
- Lake Grace
- Ravensthorpe



Image 3: Severe flag smut infection on wheat. Photo courtesy of: Geoff Thomas (DPIRD).

Flag smut has been widely reported throughout parts of the northern and central agricultural regions (from Ravensthorpe to Geraldton), affecting a range of wheat varieties. In a heavily infected paddock at the DPIRD Merredin Research Station, a wheat time of sowing and variety trial has severe infection, affecting whole plants and large amounts of

some plots. Varieties rated moderately susceptible to susceptible (MSS) (Scepter) had approximately 20% of plants affected, while susceptible to very susceptible (SVS) (Vixen) or very susceptible (VS) (Rockstar) had approximately 50% of plants affected in the earliest sowing times. Some newer varieties, without current disease ratings for this flag smut, such as Vortex, Calibre, Shotgun, Dozer CL Plus and Tomahawk CL Plus, had disease incidence that ranged between Scepter (MSS) to Rockstar (VS). Varieties ranked resistant to moderately resistant (RMR) (Ninja) to resistant (R) (Catapult, Denison, Illabo, Kinsei) had an estimated 0-5% infection under high disease pressure.

Flag smut is commonly seen in the medium and lower rainfall regions of the WA grainbelt, however the incidence within paddocks and severity of infection being seen in 2024 is significantly greater than normal. In the worst affected paddocks, some yield losses will have occurred. This season will have contributed to increased inoculum for coming years.

Flag smut is both seed (externally on the seed coat) and soil borne, and evidence from this season suggests that spores can survive for several seasons in the soil. As such, soil in these infected paddocks should be considered to contain spores which could infect wheat crops for at least the next 2 to 3 years, possibly longer.

Varietal resistance and seed dressing application is the main management options for this disease. For more fungicide information refer to DPIRD's [2024 WA sowing guide](#) and [Seed dressing and in-furrow fungicides for cereals in WA](#) pages.

Preparation for 2025 wheat crops:

- Collect seed for 2025 sowing from least infected paddocks, and harvest seed paddocks before more infected paddocks to avoid contamination carryover by machinery.
- Consider choosing less susceptible varieties if sowing wheat back into infected paddocks from this season.
- Apply a fungicide seed dressing registered for smut and bunt control in wheat in all paddocks, particularly to susceptible varieties and those sown over wheat stubbles from 2024. Historical trial results suggest that registered products should effectively reduce infection risk.

To read about earlier flag smut in wheat reports this season and for more information about flag smut symptoms and management, refer to the 2024 PestFacts WA Issue 8 article Leaf rust, powdery mildew, yellow spot/nodorum blotch and flag smut are appearing in wheat.

Further information is available at DPIRD's [Diagnosing flag smut of wheat](#) page.

Loose smut in barley and oats

- Geraldton
- Toodyay
- Muresk
- Kendenup
- South Stirling
- Esperance and Lakes districts



Image 4: Loose smut on oats. Photo courtesy of: Ciara Beard (DPIRD).



Image 5: Loose smut on barley. Photo courtesy of: Kylie Chambers (DPIRD).

Loose smut was recently found in oats near Geraldton and on barley near Toodyay, Muresk, Kendenup and South Stirling. Affected barley varieties included Rosalind, RGT Planet, Maximus CL, Neo CL and Combat.

Loose smut is a fungal disease affecting seed heads, which can cause yield losses. In plants grown from infected seed, florets are replaced with a compact mass of dark brown to black powdery spores. These spores are dispersed by wind to infect other plants and produce the next generation of infected seed. Infection is favoured by rainfall and high humidity during flowering.



Image 6: Covered smut on barley heads. Photos courtesy of: DPIRD.

In contrast, plants infected with covered smut have infected heads of brown-black masses of spores that look similar to loose smut. However, these spore masses do not readily break up or blow away, as they do with loose smut. Further information is available at DPIRD's Diagnosing covered smut in barley. Currently, nearly all smut being observed in barley crops is loose smut.

Loose smut is prevalent in many WA barley crops this year. It is important to note that infected grains, which are embryo-borne, appear normal unless embryo testing is conducted to determine the presence of smut. Due to the dry conditions during the early winter period this season, fungicide seed dressings may not have been taken up sufficiently by seedlings to prevent infected heads forming. As a result, the crop may not have been protected by some of the products used. Most crops are now well into grainfill, and the optimal time for foliar fungicide application has passed to prevent embryo infection during flowering. Therefore, the use of a registered seed dressing for the 2025 season, with good grain coverage, is recommended. Group 7 or SDHI seed dressings are particularly effective at reducing loose smut incidence.

When examining your paddock for loose smut, look for scattered plants with black heads or bare flower stalks. Infected seed is symptomless, and presence of infected plants in the source paddock is a good indicator of risk of harvesting infected seed. For more information on diagnosing smuts in barley and oats, refer to DPIRD's Diagnosing barley loose smut and Diagnosing smut in oats pages.

Infected seed is the primary disease source, and replacement of highly contaminated seed with clean uninfected seed can break the disease cycle.

Transmission of infection from seed in 2025 can be easily and effectively managed with a registered fungicide seed dressing.

For more information on managing loose smut, refer to DPIRD's Controlling barley loose smut page.

Further information

Further information on smuts in cereals can be found at DPIRD's Smut and bunt diseases of cereal - biology, identification and management page.

For more information on cereal diseases contact Plant Pathologists [Kylie Chambers](#) in Northam on +61 8 9690 2151, [Kithsiri Jayasena](#) in Albany on +61 8 9892 8477, [Ciara Beard](#) in Geraldton on +61 8 9956 8504, [Geoff Thomas](#) in Perth on +61 428 947 287 or [Andrea Hills](#) in Esperance on +61 8 9083 1144.

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